REMARKS

Claim 20 has been amended. Claims 36 - 46 and 53 - 55 have been withdrawn from consideration. No new matter has been added. Thus, claims 1 - 35 and 47 - 52 are pending in the present application. Applicant would like to thank the Examiner for the allowance of claims 1 - 19 and 47 - 49. In view of the above noted amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable.

Claims 20, 21, 23, 27, 28, 30 - 35 and 50 - 52 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Published Appln. No. 2005/0038371 to Reich et al. ("Reich") in view of U.S. Patent No. 6,622,036 to Suffin ("Suffin").

Amended claim 20 recites a system comprising first and second conduits including distal ends which, in an operative position, open into a portion of a patient's CNS with direct access to cerebrospinal fluid (CSF) and "*a brain activity detection unit for detecting and analyzing a chemical imbalance present in the CSF based on the brain activity of the patient, the brain activity detection unit controlling flow through the first and second conduits based on the determined chemical imbalance.*"

It is respectfully submitted that Reich and Suffin fail to teach or suggest a system for treating brain disorders comprising *a brain activity detection unit for detecting and analyzing a chemical imbalance present in the CSF based on the brain activity of the patient, the brain activity detection unit controlling flow through the first and second conduits based on the determined chemical imbalance*," as recited in claim 20. Specifically, the amendment to claim 20 requires that, based on the detected chemical imbalance, the movement of fluids through the first and second conduits is controlled by the brain detection unit. In the Non-Final Office Action, the Examiner has indicated that this limitation is allowable over Reich and Suffin. (*See* 5/8/09 Non-Final Office Action, pp. 2, 4).

Specifically, Reich makes no disclosure of a detection of brain activity. The Examiner has referenced Suffin to overcome this deficiency. However, it is respectfully submitted that Suffin is directed only to detecting, extracting and comparing a multivariate QEEG descriptor to a norm value and quantifying a degree of abnormality based on the descriptor value. (*See* Suffin,

col. 9, li. 51 - col. 15, li. 67; Chart 1.1 - 1.2; Tables 1 - 3.1). Suffin includes no teaching or suggestion of an element configured to determine a chemical imbalance in CSF based on detected brain activity and further shows no relationship therebetween. Furthermore, the mere fact that Suffin teaches a detection of brain activity is not enough to overcome the fact that neither Suffin nor Reich teaches or suggests a correlation between brain electrical activity and a chemical imbalance in the CSF. It is therefore submitted that the modification proposed by the Examiner constitutes an improper hindsight reconstruction of the invention and is not allowable.

It is further submitted that the proposed combination of Reich and Suffin would change the principle of operation of Reich and is therefore not allowable. Specifically, Reich teaches an infusion and withdrawal of fluids, a flow rate thereof being affected by a pressure sensor and an algorithm that measures the pressure upstream and downstream of a flow restrictor with a known flow resistance to determine if the patient is in an upright or supine position to account for changes in gravity. (*See* Reich, ¶ [0024]- [0025], [0036] - [0037]; Fig. 1). Modifying the Reich device so that the infusion and withdrawal rates are dependent on a "determined chemical imbalance," as recited in claim 20, would change the principle of operation of the Reich device by obviating the need for the supine and upright withdrawal modes and rather making the delivery and withdrawal of fluids from the patient dependent on brain activity. Reich makes no disclosure of the relevance of "brain activity," as recited in claim 20 to a standing position and rather, explicitly indicates the importance of a pressure sensor in maintaining a proper CSF turnover rate. (*See* Reich, ¶ [0012] - [0013]). Similarly, Suffin is merely directed to detecting and analyzing a QEEG and also provides no motivation for combination with the device of Reich. Accordingly, it is submitted that modification of the Reich device to affect an infusion or withdrawal of CSF based on a determined chemical imbalance as indicated in claim 20 would interfere with the function of providing such a function based on a patient's position and thus, change the principle of operation thereof.

It is therefore respectfully submitted that neither Reich nor Suffin, taken alone or in combination, teach or suggest a system comprising "*a brain activity detection unit for detecting and analyzing a chemical imbalance present in the CSF based on the brain activity of the patient, the brain activity detection unit controlling flow through the first and second conduits based on the determined chemical imbalance*," as recited in claim 20. It is submitted that claim 20 and its dependent claims 20, 21, 23, 27, 28, 30 - 35 and 50 - 52 are allowable over Reich and

Suffin for at least this reason.

Claims 22 and 29 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Reich in view of Suffin in further view of U.S. Patent No. 6,436,091 to Harper et al. ("Harper"). It is respectfully submitted that Harper does not cure the deficiencies noted above with respect to Reich and Suffin and that claims 22 and 29 are therefore allowable for at least the reasons given above in support of the patentability of claim 20 from which these claims depend.

Claims 25 and 26 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Reich in view of Suffin in further view of U.S. Published Appln. No. 2003/0130645 to Brengle et al. ("Brengle"). It is respectfully submitted that Brengle does not cure the deficiencies noted above with respect to Reich and Suffin. It is therefore respectfully submitted that claims 25 and 26 are allowable for at least the reasons given above in support of the patentability of claim 20.

In light of the foregoing, Applicant respectfully submits that all of the presently pending claims are in condition for allowance. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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